

AS

Notice of Allowability

Application No.

09/967,310

Examiner

Julian Mercado

Applicant(s)

YAMAURA ET AL.

Art Unit

1745

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 9-2-04.
2. ☒ The allowed claim(s) is/are 1-3,5-7 and 17.
3. ☒ The drawings filed on 28 September 2001 are accepted by the Examiner.
4. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☒ None of the:
 1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|---|--|
| 1. <input type="checkbox"/> Notice of References Cited (PTO-892) | 5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 6. <input type="checkbox"/> Interview Summary (PTO-413),
Paper No./Mail Date _____. |
| 3. <input checked="" type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08),
Paper No./Mail Date <u>3-11-02</u> | 7. <input type="checkbox"/> Examiner's Amendment/Comment |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit
of Biological Material | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance |
| | 9. <input type="checkbox"/> Other _____. |

DETAILED ACTION

Examiner's Amendment

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Tom Basso on September 3, 2004.

The application has been amended as follows:

1. Claim 1 has been replaced with the following:

--1. An electrochemical device, comprising:

a gas diffusion electrode comprising a fibrous carbonaceous material and a catalytic layer formed on at least a portion of a surface of the fibrous carbonaceous material including a first surface region and a second surface region, wherein at least a portion of the catalytic layer formed on the first surface region is lesser than at least a portion of the catalytic layer formed on the second surface region; and

a proton conduction unit in contact with the first surface region of the gas diffusion electrode.--

2. Claim 4 has been canceled.

3. In claim 5 at line 1, "claim 4" has been changed to --claim 5--.

4. In claim 5 at lines 1-2, "fibrous material composed of carbon" has been changed to

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--fibrous carbonaceous material--.

5. In claim 6 at line 1, "claim 4" has been changed to --claim 5--.

6. In claim 6 at lines 1-2, "fibrous material composed of carbon" has been changed to --fibrous carbonaceous material--.

7. Claims 8-16, drawn to a non-elected invention without traverse, have been canceled.

8. Claim 17 has been replaced with the following:

--17. An electrochemical device, comprising:

a gas diffusion electrode comprising a fibrous carbonaceous material and a catalytic layer formed on at least a portion of a surface of the fibrous carbonaceous material, a proton conducting unit contacting the gas diffusion electrode such that at least a portion of the fibrous carbonaceous material is embedded within the proton conduction unit, wherein at least a portion of the catalytic layer is formed on the embedded portion and at least a portion of the fibrous carbonaceous material that is not embedded within the proton conducting unit, wherein an amount of the catalytic layer is less in the embedded portion of the fibrous carbonaceous material than in the portion of the fibrous carbonaceous material that is not embedded within the proton conduction unit.--

Remarks

This Office action is responsive to applicant's amendment filed June 14, 2004.

Claims 1-3, 5-7 and 17 are pending.

Claim Rejections - 35 USC § 102 and 103

The rejection of claims 1-4 and 7 under 35 U.S.C. 102(b) or 35 U.S.C. 103(a) based on Wilkinson et al. (U.S. Pat. 5,672,439) has been withdrawn.

The rejection of claims 5 and 6 under 35 U.S.C. 103(a) based on Wilkinson et al. and Edie et al. (Effect of Microstructure and Shape on Carbon Fiber Properties, pp. 41-45, 1993, Noyes Publications, New Jersey) has been withdrawn.

The rejection of claim 17 under 35 U.S.C. 103(a) based on Wilkinson et al. and Watanabe et al. (U.S. Pat. 5,728,485) has been withdrawn.

Allowable Subject Matter

Claims 1-3, 5-7 and 17 are allowed.

By the examiner's amendment submitted above, the claims preclude a "zero amount" of catalytic material in a first surface region as shown by Wilkinson et al. as well as further defining the contact as being between a proton conduction unit and a fibrous carbonaceous material. A fibrous carbonaceous material is distinguished from the teachings of Wilkinson et al. in that the "[c]atalytic particles 86 are disposed at both major planar surfaces of each layer" (col. 7 line 21-22), while the claims as amended are drawn to catalytic deposition on first and second portions of the fibrous carbonaceous material.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Julian Mercado whose telephone number is (571) 272-1289. The examiner can normally be reached on Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick J. Ryan, can be reached on (571) 272-1292. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

A handwritten signature in black ink, appearing to be 'J. Mercado', with the letters 'jam' written below it.A handwritten signature in black ink, appearing to be 'Patrick Ryan', positioned above the printed name.

Patrick Ryan
Supervisory Patent Examiner
Technology Center 1700